Commonwealth of Kentucky
Division for Air Quality

PERMIT STATEMENT OF BASIS

FINAL
Title V, Construction / Operating
Permit: V-06-016 R1
TRANSMONTAIGNE PRODUCT SERVICES, INC. - PADUCAH TERMINAL
Paducah, KY.
October 28, 2008
Andrew True, Reviewer
SOURCE I.D. #: 21-145-00052
SOURCE A.I. #: 3071
ACTIVITY #: APE20080001

MINOR PERMIT REVISION V-06-016 R1:

TransMontaigne Product Services Inc. applied for a Minor Revision to their Title V permit for modification/operation of Tank 4 (EP 11 (T-4)) and Loading Rack 04 (LR-1) to have the flexibility for ethanol storage and ethanol blending at their facility located in Paducah, Kentucky. Modifications to the facility proposed by TransMontaigne include: modifying tank 4 for ethanol storage; and adding ethanol blending equipment to loading rack 04 (LR-1). The facility will also be modifying the loading arms to load the blended gasoline/ethanol mix, bring ethanol into the facility via trucks, store ethanol in Tank 4, and then load the gasoline ethanol into trucks. Tank 4 and loading rack 04 are permitted for low vapor pressure products in existing permit V-06-016.

The floating roof on Tank 4 will have the existing liquid mounted primary seal and existing secondary rim mounted seal replaced with new ethanol compatible seals. The seal configuration may stay the same or it may be replaced with a primary mechanical shoe seal and a secondary wiper seal. The facility has requested that Tank 4 remain authorized to store gasoline (or other lower vapor pressure products) in the future.

TransMontaigne will not be adding any additional loading arms and/or risers as part of this project. The loading rack will be modified to dispense E-10 mix of gasoline and ethanol. TransMontaigne will not load pure ethanol from the loading rack. As part of this project TransMontaigne will be modifying each of the existing 14 loading arms on loading rack 04 (LR-1). The source estimates that
the following components will be added to each existing loading arm: three flanged valves, two welded valves, six flanges not associated with valves, one meter, and one strainer. No changes will be made to the control device associated with loading rack 04 (LR-1) as part of this project and therefore; no changes to the existing CAM plan are required at this time.

The existing annual throughput limitation of 45,000 gallons/hour and 270,106,200 gallons/year on loading rack 04 (LR-1) will not be adjusted as part of this project. Additionally the 10,953,725 gallons/year throughput limit permitted for tank 4 and the facility wide throughput limit of 430,031,340 gallons of gasoline per year will not be changed as part of this modification.

When tank 4 was permitted for gasoline service, the facility estimated emissions to be 2.12 tons/year of VOC. VOC emissions from tank 4 after the proposed modifications are estimated to be 0.111

tons per year. The fugitive emissions from the new components are estimated to be 0.07 ton per year of additional VOCs. Therefore it is estimated that there will be a net decrease in emissions from this change since the combined total of the new VOC emissions is 0.181 tons/year versus the existing emission rate of 2.12 tons/year.

Tank 4 is not currently subject to the New Source Performance Standards (NSPS) in 40 CFR 60 Subparts K, Ka, or Kb because the tank was constructed in 1939. The changing of the seals to make them compatible with ethanol does not make the tank subject to any of these requirements.

The terminal is subject to the NSPS requirement in 40 CFR 60 Subpart XX. The addition of ethanol blending capability to the loading rack does not trigger any new requirements.

The facility is subject to the National Emission Standard for Hazardous Air Pollutants (NESHAP) in 40 CFR 63 Subpart BBBBBB. The compliance date for this rule is January 10, 2011.

U.S. EPA REVIEW:

The U.S. EPA was notified of the issuance of the proposed permit revision on September 9, 2008 via e-mail. The comment period expired 45 days from the date of the e-mail. No comments were received during this period. The permit is now being issued final.

SOURCE DESCRIPTION V-06-016 R1:

TransMontaigne Product Services, Inc. operates a bulk gasoline terminal located in Paducah, Kentucky (Paducah/Cairo area). It dispenses: diesel fuel; conventional gasoline; resin oil No.80; and jet A/kerosene. Currently, the terminal is using 13 internal floating roof storage tanks for gasoline. All of these gasoline storage tanks are existing, and were constructed prior to 1972. Six (6) diesel (low VP petroleum product) storage tanks are existing. Please refer to Section C - INSIGNIFICANT ACTIVITIES of the draft permit for a list of these facilities. Two loading racks are in operation. A two-bay unit with eleven (11) loading arms is located at the Paducah facility and a unit with fourteen (14) loading arms is located at the Riverway facility. VOC emissions from the Paducah and Riverway loading racks are controlled by a 95% efficiency John Zink Vapor Combustion Unit located at the Paducah terminal. The terminal complex currently processes 430,031,340 gallons/year of conventional gasoline, 374,701,450 gallons/year of distillate and 70,000,000 gallons/year of distillate for barge loading.

COMMENTS:

Type of control and efficiency:

Prior to August, 2004, VOC emissions from the Paducah loading racks were controlled by either a Vapor Combustion Unit (VCU) or a Flare with 95% and 94% efficiency, respectively and the Riverway terminal loading racks were controlled by the VCU. This configuration was reflected in permit V-99-021, Revision 1, issued August 27, 2001. Per TransMontaigne Product Services Inc.'s letter to the Division dated July 9, 2004, the Flare has been removed from service at the Paducah terminal and, as permitted pursuant to Revision 1, the VCU at the Paducah terminal has been utilized for the continued control of VOC emissions from both terminals since August 2004.

Emission factors and their source:

Tank emissions were calculated using US EPA TANKS V. 4.09. Gasoline loading rack emission factors are based on results of Initial Compliance Testing performed in 3/27/02 which resulted in VOC emissions of 1.58 mg/l of gasoline. Diesel loading rack emission factors are based on AP-42, Section 5.2. Gasoline HAP emissions are based on factors from API's *Hazardous Air Pollutant Emissions from Gasoline Loading*. NOx and CO emission factors from the VCU are based on a manufacturer's guarantee. Fugitive Emissions were calculated based on API's *Fugitive Emissions from Equipment Leaks II: Calculation Procedures for Petroleum Industry Facilities.*

Applicable Regulations:

a. 401 KAR 60:005. [40 CFR Part 60] *Standards of Performance for New Stationary Sources*:
   - The applicable provisions in 40 CFR 60.1 to 60.19 (Subpart A), *General Provisions,* which are incorporated by reference in Section 3 of the above administrative regulation; and
   - 40 CFR 60.500 to 60.506 (Subpart XX), *Standards of Performance for Bulk Gasoline Terminals*, incorporated by reference in Section 3 of the above administrative regulation.

   The requirements of 40 CFR 60.500, Subpart XX, apply to the loading operations at the Paducah and Riverway facilities. This determination is consistent with that made by the Division during initial TV permitting for the loading racks at this *Bulk Gasoline Terminal*, as defined at 40 CFR 60.501. The permittee utilizes a vapor combustion unit (VCU) that is located at the Paducah facility to control VOC (and organic HAP) emissions.

b. 401 KAR 59:099, *New Bulk Gasoline Terminals*.
   This rule was repealed on December 12, 1994 and has been replaced by 401 KAR 60:005, which incorporates by reference 40 CFR 60.500, Subpart XX. As discussed above, the requirements of 40 CFR 60, Subpart XX are included in the permit for the Paducah and Riverway loading operations. These loading facilities have been determined by the Division to be new *bulk gasoline terminals* due to their reconstruction and based on the method of gasoline transfer at this plant (i.e., barge).

c. 401 KAR 50:012, *General Application.*
   Pursuant to 401 KAR 50:012, Section (2), in the absence of a specified standard, all major air contaminant sources are required to apply control procedures that are reasonable, available and practical. This plant is a major source of VOC emissions and is subject to 401 KAR 50:012, Section (2). As discussed below (non-applicable regulations), 401 KAR 61:050, *Existing storage vessels for petroleum liquids*, does not apply to the plant petroleum storage tanks. This notwithstanding, the Division determined during initial Title V permitting that the requirements of 401 KAR 50:012, Section (2) would be satisfied by complying with the operational requirements 401 KAR 61:050, Section 4 since these requirements are considered reasonable, available, and practical. These requirements are incorporated into this permit.

d. 401 KAR 63:010, *Fugitive Emissions.*
   Pursuant to 401 KAR 63:010, Section 1, the requirements of this rule apply to an apparatus, operation, or road which emits or may emit fugitive emissions provided that the fugitive emissions from such facility are not elsewhere subject to an opacity standard within the administrative regulations of the Division for Air Quality. Therefore, 401 KAR 63:010 is an applicable rule for the equipment leaks.

e. 40 CFR 64, *Compliance Assurance Monitoring (CAM)*
   The requirements of 40 CFR 64, *Compliance Assurance Monitoring*, apply to each pollutant

specific emissions unit (PSEU) at a major Part 70 source when the emission unit has a pre-controlled PTE of a regulated air pollutant at or greater than 100 percent of the applicable Part 70 major source threshold. Pursuant to 40 CFR 64.2(a), the requirements of this rule are applicable to the Paducah and Riverway Terminals' loading operations, respectively identified as EP 15 (LR-1) and EP 04 (LR-1), for emissions of VOC. Both loading racks utilize the Paducah Terminal's vapor combustion unit (VCU), which is an enclosed flame, in order to comply with the respective VOC emission limits. The permittee submitted the requisite CAM plan for these emission units and control device on August 23, 2004 as part of the TVOP renewal application.

In general, the system parameter and monitoring approach reflects the ultraviolet flame detector (UFD) installed in the VCU to detect the flame presence during gasoline loading. After tanker truck hookup at each loading rack, a remote signal is sent to the flare programmable logic controller (PLC) to automatically ignite the pilot flame. The UFD continuously senses the ultraviolet radiation emitted by the flames and generates an electric current signal to the PLC. If a pilot flame is not detected by the UFD after the fifth automatic ignition trial, the PLC will shut down the combustion system due to pilot flame failure. After the UFD verifies that a flame is present, a green indicator light is illuminated in the operator's office; however, if the UFD signal is not detected or lost during loading, the loading rack automatically shuts down and the green indicator light is off.

f. 401 KAR 59:050, *New Storage Vessels for Petroleum Liquids.*
This rule does not apply to any storage vessel with a storage capacity larger than 40,000 gallons at this plant since they each commenced before the classification date of April 9, 1972. However, this rule does apply to vessels with a storage capacity less than or equal to 40,000 gallons at this plant that commenced on or after July 24, 1984, since this plant is a major source of volatile organic compounds.

g. 40 CFR 63 Subpart BBBBBB, National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Distribution Bulk Terminals, Bulk Plants, and Pipeline Facilities applies to this source. The permittee shall comply with all the requirements specified therein by January 10, 2011.

EMISSION AND OPERATING CAPS DESCRIPTION:
VOC emissions from the Paducah and Riverway loading racks are controlled by a John Zink Vapor Combustion Unit located at the Paducah terminal. Emissions are below the standard of 35 grams/liter of gasoline transferred. All gasoline storage tanks have floating roofs. Through recordkeeping and reporting, the terminal will maintain parameters which will ensure operation below any emission limits or standards. Additionally, as established in V-99-021, the plant is not a major source of HAP emissions, as defined at 40 CFR 63.2. Therefore, the requirements pursuant to 40 CFR 63 for major HAP emission sources, including 40 CFR 63, Subpart R, *National Emission Standards for Hazardous Air Pollutants for Gasoline Distribution Facilities (Bulk Gasoline Terminals and Pipeline Breakout Stations),* do not apply. Enforceable source-wide HAP emission limitations have been incorporated into Section D of the permit.

PERIODIC MONITORING:
Monitoring for the loading rack at the Paducah complex is performed in accordance with 40 CFR 60 Subpart XX (Paducah facility and Riverway facility) which includes tank truck tightness checks.

Monthly VOC leak checks are required for the following: the vapor collection system; the vapor processing system; and loading rack during the process of loading gasoline.

For the Vapor Combustion Unit (Paducah facility), a log of gallons of petroleum products loaded or processed is maintained and a daily log of combustion chamber temperature and maximum vacuum pressure produced during the gasoline loading operations is maintained.

The permittee shall monitor the average monthly temperature, the type of liquid, and the Reid vapor pressure of the stored liquid, and duration time of liquid stored.

When barges are being loaded at the Paducah and Riverway facilities, the source must maintain a log of date loaded, material, and vapor pressure.

ADDITIONAL CHANGES MADE TO PERMIT WITH THIS REVISION

In addition to the revision of the permit for modification/operation of Tank 4 (EP 11 (T4)) and Loading Rack 04 (LR-1) for ethanol storage and ethanol blending, Section C, Insignificant Activities, was revised. The capacities of the following tanks were revised per the DEP7007DD form received by the Division on 8/21/08: Tank 40A; 40B; 41A; 41B; T109; and T110.

CREDIBLE EVIDENCE:

This permit contains provisions which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has only adopted the provisions of 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12 into its air quality regulations.

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